

August 30, 2019

**VIA ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th St. SW  
Washington, DC 20554

Re: **Ex Parte Submission**

***Modernizing the E-rate Program for Schools and Libraries -- WC Docket No. 13-184  
Schools and Libraries Universal Service Support Mechanism -- CC Docket No. 02-6***

Dear Ms. Dortch:

On August 28, 2019, Kyle Tully and John Harrington shared the attached "Category 2 Budget Utilization" presentation with Travis Litman, Chief of Staff and Senior Legal Advisor for Commissioner Rosenworcel.

We explained that the E-rate Category Two ("C2") budget system is a success and a huge improvement over the previous "Priority" system. In the years immediately prior to the adoption of the budget system, schools and libraries received no financial support for on-campus broadband; and, prior to that, support had been inconsistent and mostly limited to a small percentage of E-rate applicants. This impeded the deployment of Wi-Fi and created a myriad of issues for schools and libraries, as well as administrative issues for the E-rate program.

We emphasized to Mr. Litman that under the C2 budget system, all school and library sites nationwide can receive E-rate discounts for on-campus connectivity; indeed, over the past five years, 85% of school sites and 44% of library sites have benefited from these discounts. We estimate that the total investment has been \$6.46 billion, with the E-rate program providing \$4.69 billion, and schools and libraries paying the balance of \$1.77 billion.

We mentioned that 84% of applicants in a recent survey agreed that they could depend on E-rate funding<sup>1</sup>. From the same survey, we also shared that 98% of applicants describe Wi-Fi as being extremely or very important to their organization's mission, and that 75% of them will need to upgrade their Wi-Fi by 2022. Together, these statistics paint an important picture: over the *next* five years, Category Two funds are poised to play an even bigger role in shaping our nation's schools and libraries.

Because the need is so strong, and the stakes are so high, we expressed that applicants deserved the very best, most effective, most efficient C2 budget system possible. For that reason, we described areas for potential improvement. We stated that the current budget amounts are too low for 40% of sites; that unnecessary complexity was leading to unnecessary funding delays and denials; and that, because of the current method of administering the C2 budgets, the FCC was gathering incomplete and sometimes inaccurate data regarding on-campus broadband projects.

To address these areas, we recommended the following five changes be made to enhance the C2 budget system. First, the budget factors should be increased to better serve the needs of all sites, particularly small sites and older buildings. We recommend that the budget floor be set at \$30,000, the per student budget factor set at \$256, and that libraries have a unified per square foot budget factor of \$6.

Second, we expressed our view that district-level (a.k.a. system-level) budgets would dramatically reduce the administrative burden for participants, speed the application review process and, for the most part, eliminate most C2-budget related funding denials. We clarified that the system-level budgets should only be applied to applicants who function with system-level budgets. For example, a public school district with multiple sites should be allowed to allocate its budget across multiple sites. If an applicant does not apply as a school district or library system, then the individual sites should be allowed to continue budgeting for themselves as they have the past five years.

Third, we told Mr. Litman our belief that the distinctions *within* the Category Two budgets (i.e. internal connections, basic maintenance of internal connections, and managed internal broadband services) were a relic of the priority system and were no longer necessary.

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<sup>1</sup> See <https://ecfsapi.fcc.gov/file/108010655418094/FY2019TrendsReport-ExParte2019-07-30.pdf>, p 15.

Fourth, we suggested that all network related infrastructure be eligible for support and that the FCC eliminate the need to cost allocate network-related functions. Any security, network management or other network functionality that is not an end user device and is necessary for the proper functioning of a network should qualify for support and do so without a cost allocation.

Fifth, we recommended that the budget cycle be a fixed five-year period for all applicants. Not only would it be easier and more predictable for applicants, but it would have the added benefit of allowing the FCC an opportunity in future years to make additional changes to the C2 system without the complexity of adjusting or having to somehow sync up varying budget cycles. For example, we shared, if, in the future, the FCC decided to change to a three-year or seven-year budget cycle, it would be extremely difficult to do so if applicants were operating under difference budget cycles; however, if everyone was on the same cycle, it would be very easy to cutover to the new budget system/cycle. Therefore, it is in the best interest of applicants, the FCC, and the hprogram as a whole that there be a fixed five-year budget cycle.

After outlining these areas for improvement, we shared additional statistics about the use of E-rate funding in schools, such as the average annual funding of \$22,089 per site, the average discount rate of 71%, and the fact that about one-third of sites were included on applications in any given funding year.

To explain the rationale behind our recommendation to increase the budget floors, we shared several important observations from our analysis of the C2 budget data, as well as our own anecdotal insights. We emphasized that the low E-rate budget floor, currently about \$9,800, was too low, and, because of that, small schools were three times more likely not to receive C2 support than larger facilities. We also pointed out that this trend was consistent regardless of the size of the “parent” applicant (i.e. the size of the school district submitting the Form 471 application.) In charting the average utilization rate of school buildings based on their overall C2 budget, it appears that it is at around the \$30,000 mark that the utilization of C2 funds reaches an average level. Above that level, the utilization of C2 funds is remarkably consistent. (The overall average school site budget utilization is 65.1%.) We shared our estimate that the increase in the budget floor to \$30,000 would result in an additional \$59.2 million investment per year of E-rate funding.

We then discussed the per student budget factor. We explained that there were an estimated 111,963 school sites with the opportunity to request C2 discounts from year 2015 to 2019. We described that per student budget utilization varied from school building to school building, based on factors such as the age

of the building, the school's current level of technology integration, and the school's access to funding to pay its share of project costs. For example, there were 2,147 school sites, of varying size, that spent a total in the range of \$63.88 to \$71.85 per student. Looking at all the buckets of spending levels, there were around 2% of sites in each \$8 range of spending, up until reaching the C2 per student budget cap of approximately \$160. At this point, the sites that had more expensive projects were required to truncate their requests and move them to the level of the C2 per student budget cap. We described that this pattern was consistent across school sizes, locations, and discount rates. Charting the distribution of project costs that were below the budget cap, the trend indicates that most applicants would have had their needs sufficiently met had the per student budget cap been set at \$255.78.

Using this as our guide, we shared a forecast chart to illustrate what the true C2 budget demand data is likely to be with a higher per student budget cap. We estimate that an increase in the per student budget cap to \$256 would result in an additional \$71.1 million investment per year of E-rate funding.

Finally, we shared a similar type of analysis for library sites. We explained that libraries follow a different pattern. Their utilization of C2 funds is not impacted by the budget floor amount in the same way that school sites are. Furthermore, the C2 per square foot budget factors seem to closely match the actual demand listed on library applications. Our trendline analysis suggest that the "true" C2 budget factors should be set at \$2.99 per square foot for rural schools, or \$5.97 per square foot for urban schools. We offered our opinion that a single budget factor would be advantageous, and, upon further analysis, we recommend a single budget factor of \$6.00 per square foot for all libraries.

Respectfully submitted,

*/s/ John D. Harrington*

John D. Harrington

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Funds For Learning, LLC  
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# Category 2 Budget Utilization

**FY2015 – FY2019**

August 28, 2019

# C2 is a Huge Improvement Over Priority 2

- No funding for internal connections in 2013 and 2014
- Prior to that, funds were mostly available to a small % of applicants
- Inconsistency hindered effective technology planning
- Networks became bottlenecked by on-campus connections
- Unknown E-rate results encouraged “all or nothing” applications

## Now, with Category 2, from 2015 to 2019:

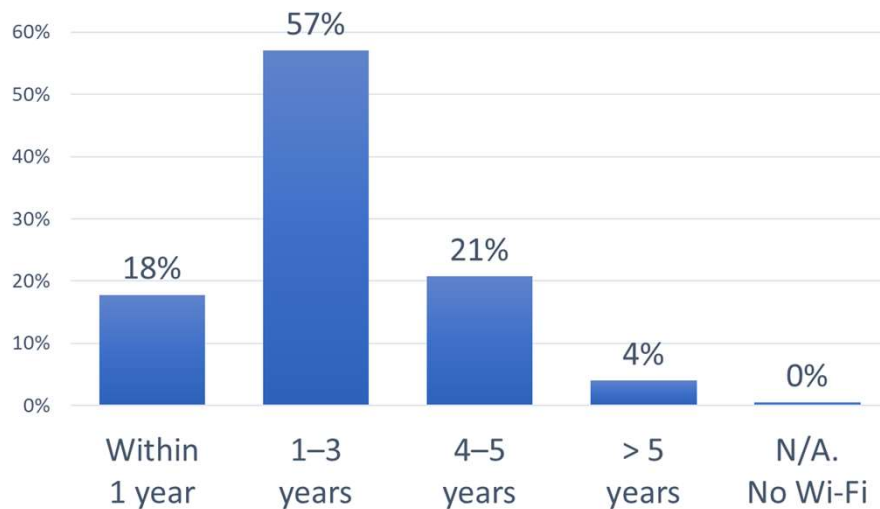
- All sites have the opportunity to receive C2 support
  - 85% of schools have received C2 support
  - 44% of libraries have received C2 support
- \$6.46 billion invested in on-campus networking (estimated)
  - \$4.69 billion invested in E-rate funds
  - \$1.77 billion invested from school and library budgets
- 84% of applicants agree they can depend on funding

# C2 Poised to Play a Bigger Role Next 5 Years

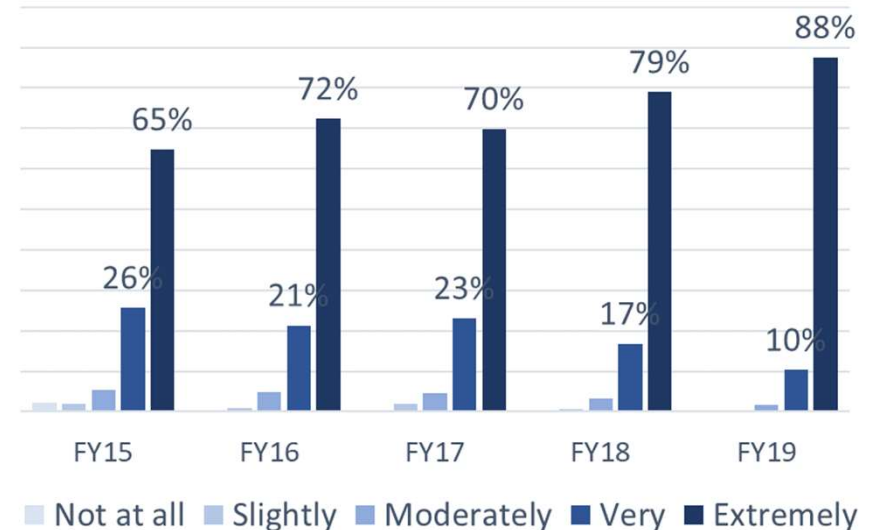
-National Survey of Applicants

- 98% of applicants: Wi-Fi very/extremely important
- 75% of applicants: Need to upgrade Wi-fi by 2022

When will Wi-Fi need upgrade?



How important is Wi-Fi?





# Applicants Deserve the Best C2 Support

- There is room for improvement
- Current budget amounts are too low for 40% of sites
- Unnecessary complexity leads to delays and denials
- C2 data gathered by the FCC is incomplete

# Changes Recommended

- Increase budget factors to serve the needs of all sites
  - Floor: \$30,000
  - \$256 per student; \$6 per square foot
- Simplify system-level budget tracking
- Reduce C2 to one set of services (combine IC, BM, MIBS)
- Allow all network infrastructure (and eliminate cost allocations)
- Set a five-year fixed cycle for budgets

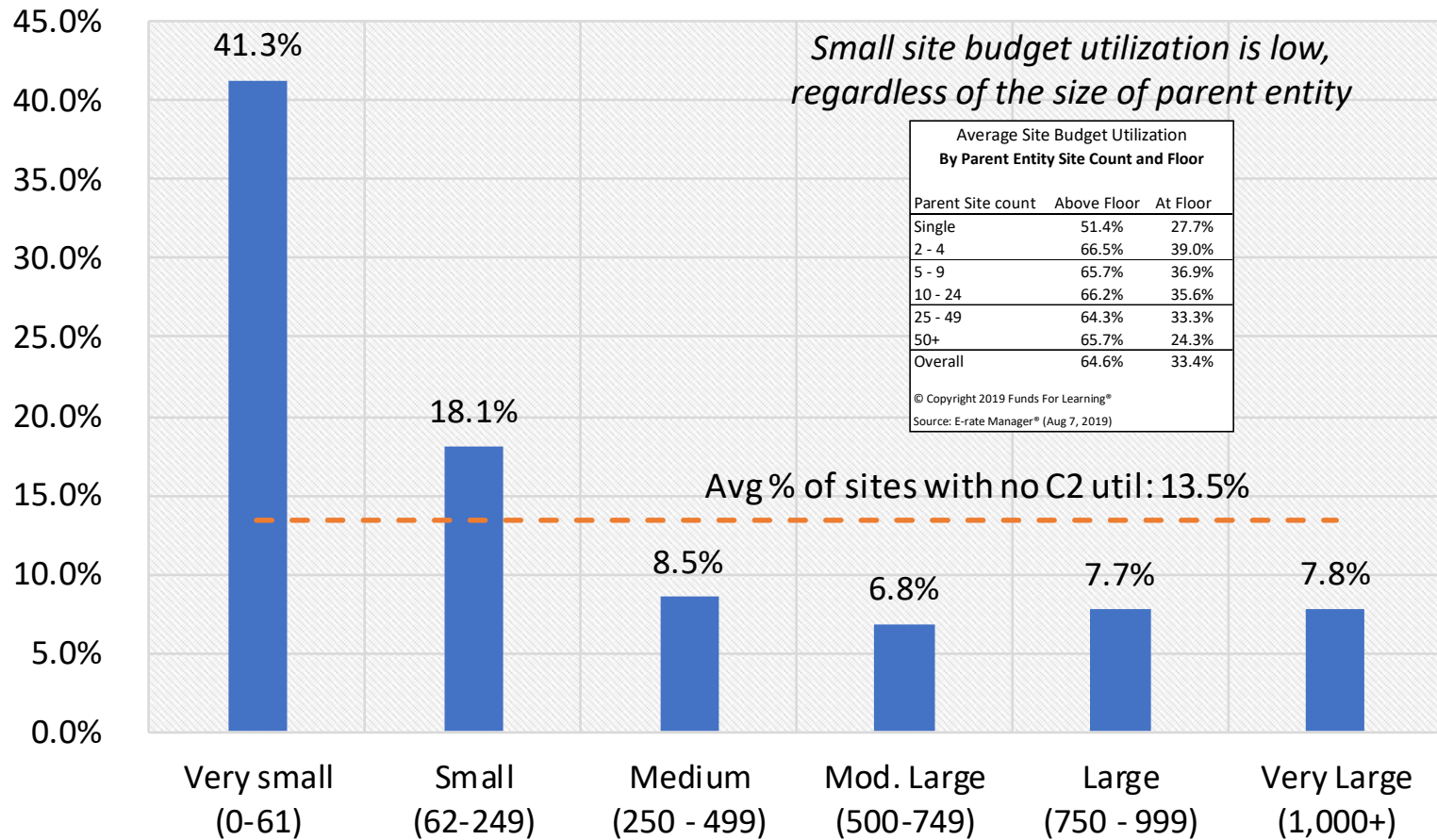
# School Budget Factors

Current budget factors discriminate against older and smaller sites

About one-third of school sites apply each year

	<b>FY2015</b>	<b>FY2016</b>	<b>FY2017</b>	<b>FY2018</b>	<b>FY2019</b>
Total Budget Utilized	\$1,862,993,963	\$1,377,157,759	\$1,007,404,487	\$894,563,167	\$1,207,163,928
Total Discount Utilized	\$1,417,820,907	\$980,030,684	\$712,844,087	\$629,295,316	\$860,918,567
Count of Sites	48,157	43,078	35,422	34,254	43,569
Count of Parent BENs	8,785	8,130	6,967	6,837	8,679
<i>Avg Site Count Per Parent BEN</i>	5.5	5.3	5.1	5.0	5.0
Avg Budget Utilized per Site	\$38,686	\$31,969	\$28,440	\$26,116	\$27,707
Avg Discount Utilized per Site	\$29,442	\$22,750	\$20,124	\$18,371	\$19,760
Avg. Disc. Rate	76.1%	71.2%	70.8%	70.3%	71.3%
% of Sites Requesting C2	43.0%	38.5%	31.6%	30.6%	38.9%

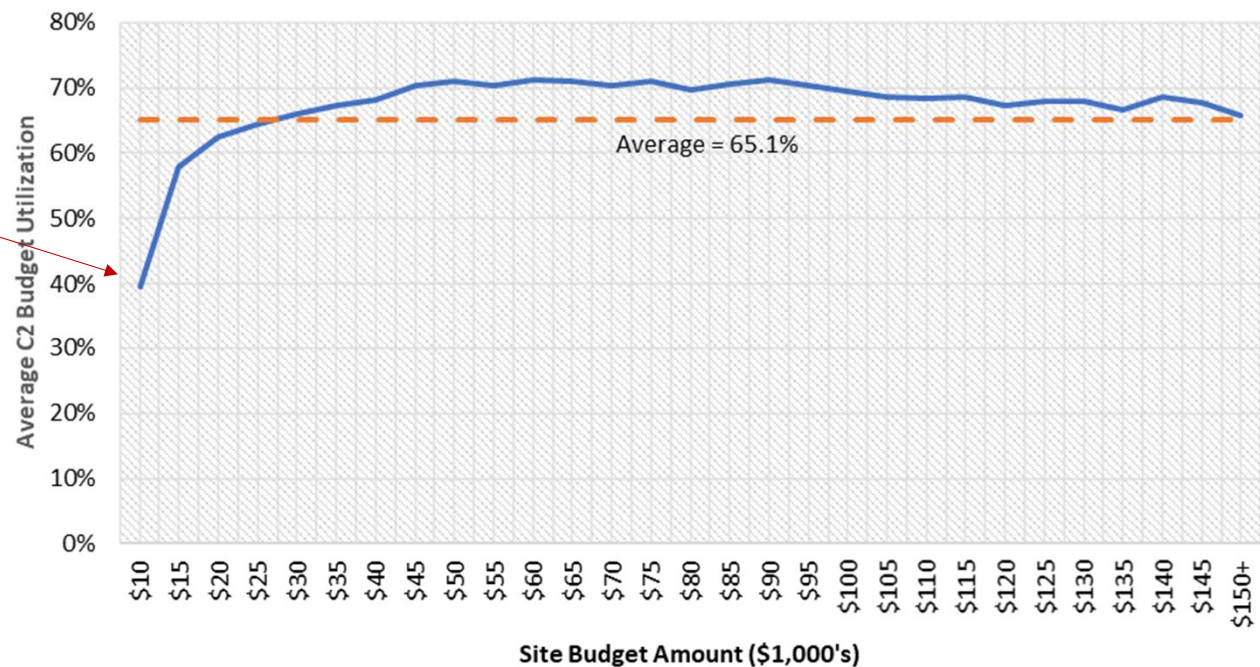
# Very small schools 3X more likely not to apply



# C2 utilization at small sites is below average

Available School Budget	Site Count	Average Utilization
\$10,000	12,200	39.7%
\$15,000	3,757	58.0%
\$20,000	3,863	62.5%
\$25,000	3,497	64.4%
\$30,000	3,550	66.1%
\$35,000	3,753	67.2%
\$40,000	3,888	68.1%
\$45,000	4,102	70.4%
\$50,000	4,343	70.9%
\$55,000	4,369	70.4%
\$60,000	4,564	71.2%
\$65,000	4,786	71.1%
\$70,000	4,525	70.4%
\$75,000	4,482	70.9%

Available School Budget	Site Count	Average Utilization
\$80,000	4,381	69.7%
\$85,000	3,857	70.6%
\$90,000	3,558	71.1%
\$95,000	3,353	70.4%
\$100,000	3,071	69.4%
\$105,000	2,701	68.5%
\$110,000	2,404	68.4%
\$115,000	2,260	68.5%
\$120,000	1,951	67.3%
\$125,000	1,722	68.0%
\$130,000	1,636	68.0%
\$135,000	1,340	66.7%
\$140,000	1,255	68.6%
\$145,000	1,076	67.7%
\$150,000+	11,719	65.9%
	111,963	65.1%

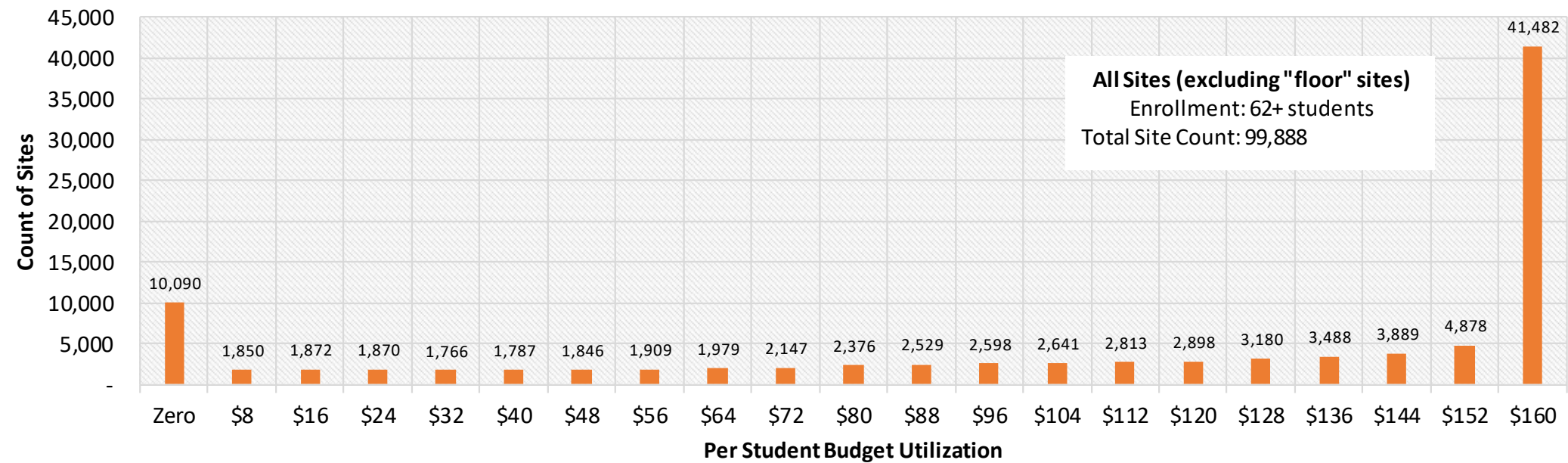


# School Sites by Per Student Budget Utilization

Per Student Budget Utilization	Category Two Funds Requested						No Category Two Funds Requested						Total School Site Count	
	School Enrollment						School Enrollment							
	Very small 0-61	Small 62 - 249	Medium 250 - 499	Mod. Large 500 - 749	Large 750 - 999	Very Large 1,000 +	Very small 0-61	Small 62 - 249	Medium 250 - 499	Mod. Large 500 - 749	Large 750 - 999	Very Large 1,000 +	Total	%
No utilization							4,989	4,024	3,012	1,595	732	727	15,079	13.5%
Floor	7,086												7,086	6.3%
\$0.01 to \$7.98		264	510	526	258	292							1,850	1.7%
\$7.99 to \$15.97		359	666	434	196	217							1,872	1.7%
\$15.98 to \$23.95		382	631	498	154	205							1,870	1.7%
\$23.96 to \$31.93		355	595	415	188	213							1,766	1.6%
\$31.94 to \$39.92		350	627	416	178	216							1,787	1.6%
\$39.93 to \$47.90		343	654	428	196	225							1,846	1.6%
\$47.91 to \$55.88		355	644	517	200	193							1,909	1.7%
\$55.89 to \$63.87		401	646	497	203	232							1,979	1.8%
\$63.88 to \$71.85		391	700	571	255	230							2,147	1.9%
\$71.86 to \$79.83		438	793	626	248	271							2,376	2.1%
\$79.84 to \$87.82		449	862	663	270	285							2,529	2.3%
\$87.83 to \$95.80		460	934	652	273	279							2,598	2.3%
\$95.81 to \$103.78		457	968	662	262	292							2,641	2.4%
\$103.79 to \$111.77		469	1,042	709	290	303							2,813	2.5%
\$111.78 to \$119.75		465	1,051	731	325	326							2,898	2.6%
\$119.76 to \$127.74		529	1,091	819	401	340							3,180	2.8%
\$127.75 to \$135.72		605	1,228	942	351	362							3,488	3.1%
\$135.73 to \$143.70		663	1,392	1,002	438	394							3,889	3.5%
\$143.71 to \$151.69		836	1,751	1,276	520	495							4,878	4.4%
\$151.70 to \$159.67		9,679	15,602	9,363	3,564	3,274							41,482	37.0%
<b>Total Site Count</b>	<b>7,086</b>	<b>18,250</b>	<b>32,387</b>	<b>21,747</b>	<b>8,770</b>	<b>8,644</b>	<b>4,989</b>	<b>4,024</b>	<b>3,012</b>	<b>1,595</b>	<b>732</b>	<b>727</b>	<b>111,963</b>	<b>100.0%</b>

# School Sites by Per Student Budget Utilization

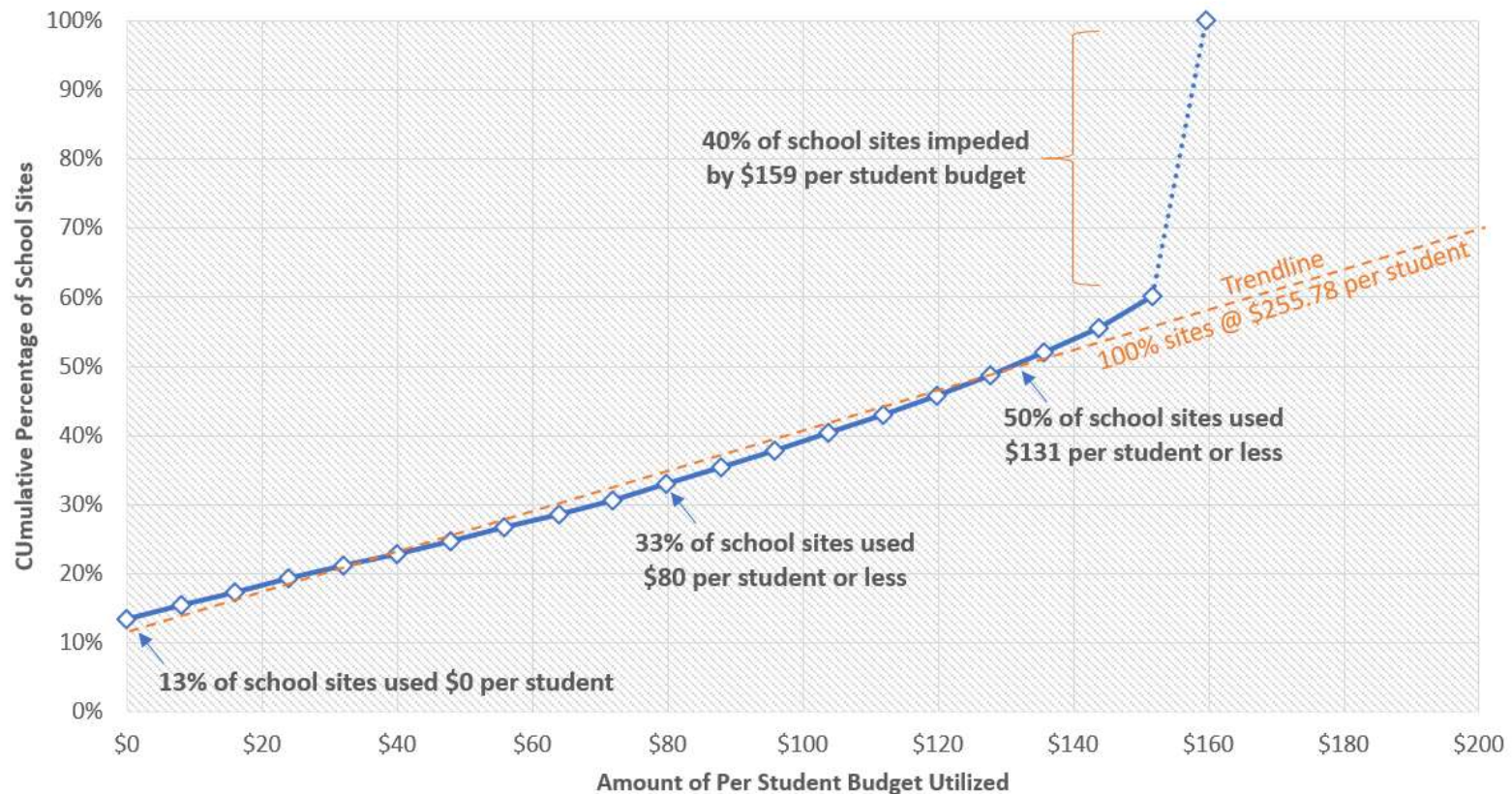
## All Sites





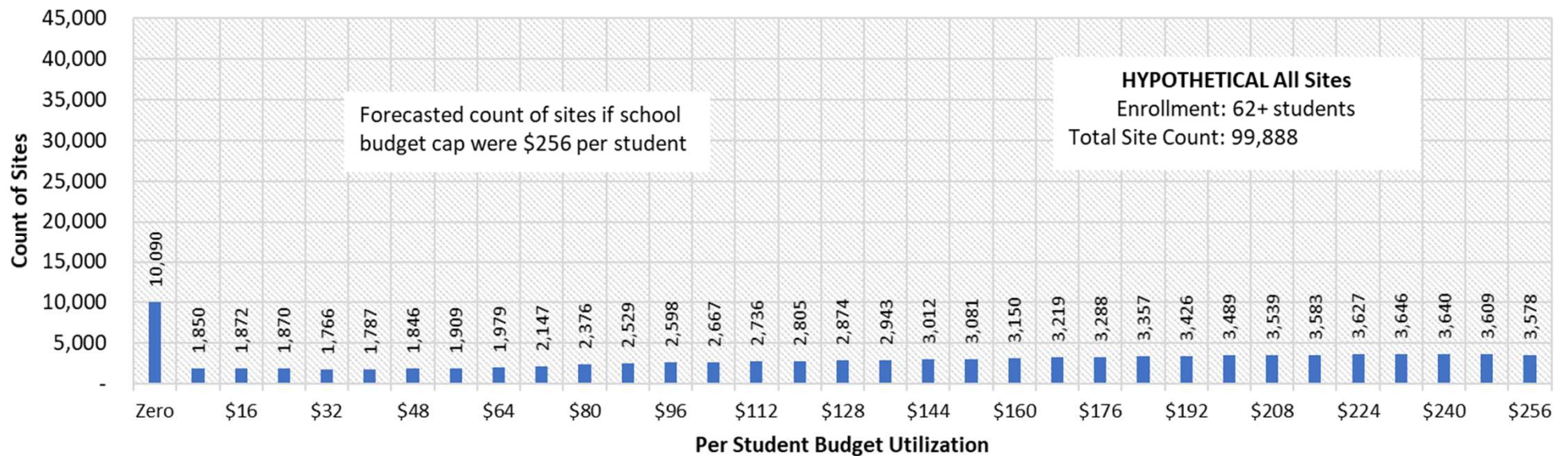
# Forecasting % of Sites Using Per Student Budget

*Majority of school sites used less than \$131 per student. Trendline indicates need for \$255.78 per student.*



# Hypothetical Budget Util with \$256/student

## All Sites

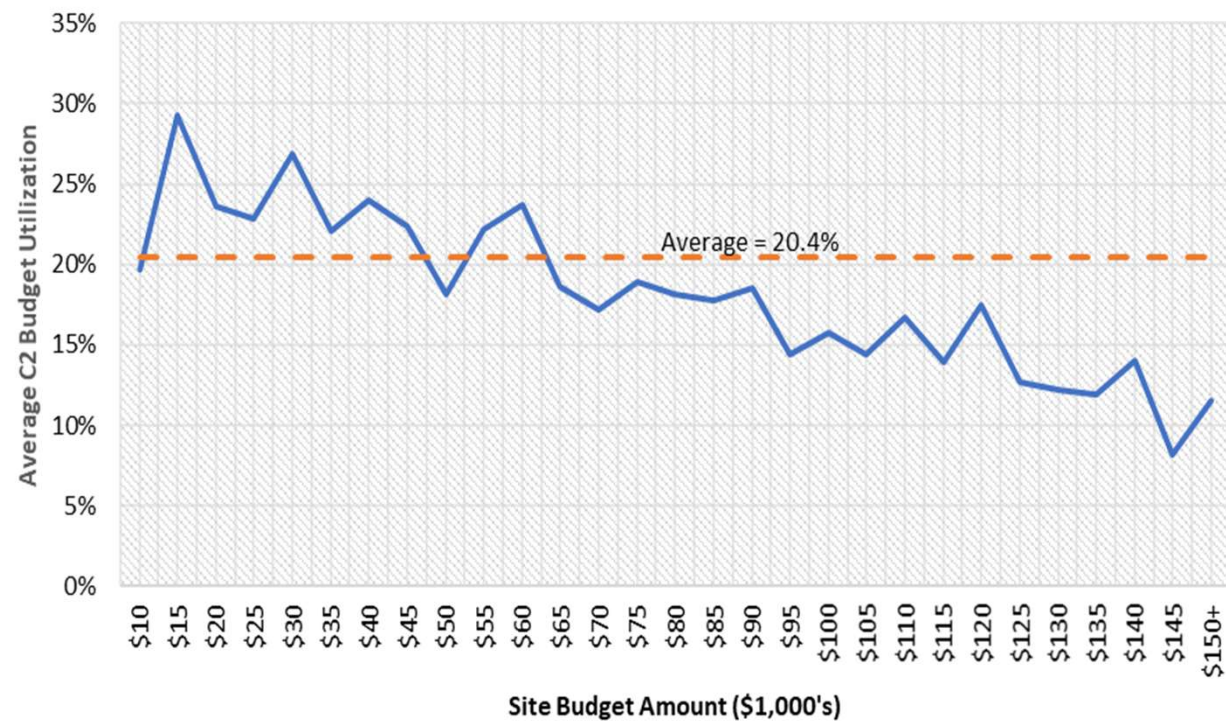


# Library Site Analysis

# C2 utilization at libraries declines with budget

Available Library Budget	Site Count	Average Utilization
\$10,000	5,362	19.7%
\$15,000	1,098	29.3%
\$20,000	722	23.6%
\$25,000	842	22.9%
\$30,000	490	26.9%
\$35,000	388	22.1%
\$40,000	432	24.0%
\$45,000	315	22.3%
\$50,000	251	18.2%
\$55,000	338	22.2%
\$60,000	250	23.8%
\$65,000	274	18.7%
\$70,000	218	17.2%
\$75,000	164	18.9%

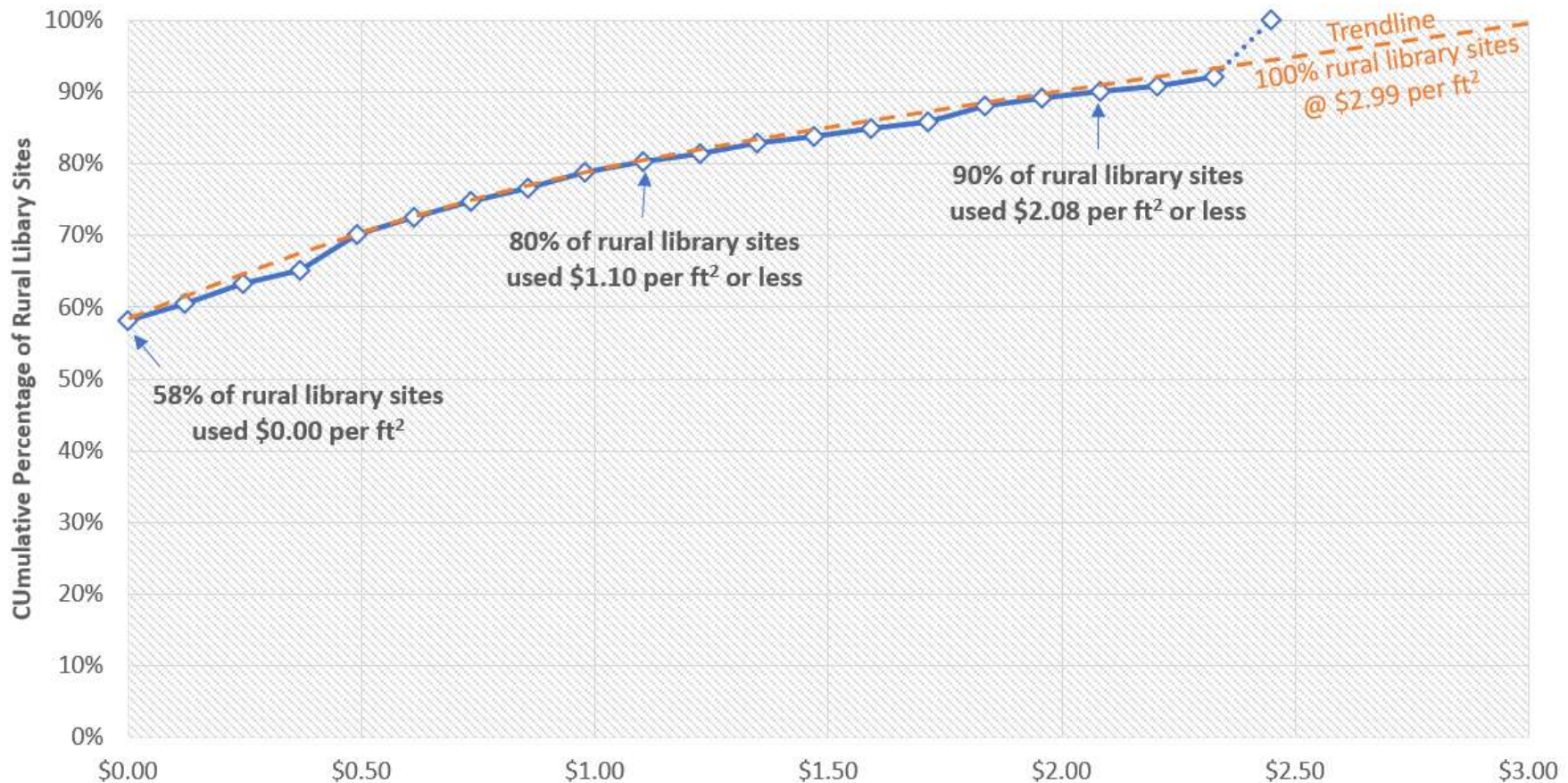
Available Library Budget	Site Count	Average Utilization
\$80,000	201	18.1%
\$85,000	124	17.8%
\$90,000	157	18.6%
\$95,000	96	14.5%
\$100,000	112	15.8%
\$105,000	84	14.4%
\$110,000	132	16.7%
\$115,000	84	14.0%
\$120,000	72	17.5%
\$125,000	58	12.7%
\$130,000	60	12.2%
\$135,000	111	12.0%
\$140,000	60	14.1%
\$145,000	38	8.2%
\$150,000+	1,007	11.6%
	13,540	20.4%





## Cumulative Percentage of Rural Library Sites Based on Per Sq. Footage Budget Utilization

58% of rural library sites did not apply for Category 2. Trendline indicates need for \$2.99 per square foot.



## Cumulative Percentage of Urban Library Sites Based on Per Sq. Footage Budget Utilization

44% of rural library sites did not apply for Category 2. Trendline indicates need for \$5.97 per square foot.

